

Ethno-gynecological study on the medicinal plants traditionally used in southern districts of West Bengal, India

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Information related with Ethno-Gynecological uses of locally available plants in the rural part of West Bengal were collected from the medicine men and documented. Three southern districts of West Bengal, India with different Agro-climatic conditions, viz. Paschim Medinipur, Purba Medinipur, and Murshidabad were selected for that purpose. Information was collected on the use of plant parts to treat problems like infertility, dysmenorrhoea, leucorrhoea, profuse menstrual bleeding and irregular menstrual period and also as agent for termination of pregnancy. With the help of available literatures, the previously reported use of these medicinal plants are analyzed in the perspective of identifying any possible impact on problems considered as female diseases.

Keywords: Gynecology, Medicinal plants, Traditional use, *Santhal* tribe, *Lodha* tribe, West Bengal.

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Rural people, especially the ethnic communities of India, traditionally use the plant resources for their food, shelter and healthcare. In this regard, a biological relationship is framed out and traditional uses of plants as medicine are in practice. Such knowledge, mostly oral, is passed on to generations and thus appears to be eroding owing to the gradual changes in the life style of these communities¹. India is one of the 12 countries with mega biological diversities. It is estimated that among around 70,000 plant species, almost 7500 species have been recorded to have medicinal value². Among these, about 950 plant species are found to be new claims and worthy of scientific investigations. Many of these species are also used in various traditional medicine systems like *Ayurveda*, *Unani*, *Siddha*, etc.³. Presently, almost 300 species are used by 7800 medicinal drug manufacturing units in India, which consume about 2000 tons of herbs annually².

Even after identification of many plants used in Indian system of medicine, a large number of plants or uses of plant are yet to be analyzed, particularly which are confined among the people of rural areas¹.

Use of locally available herbs by the rural people as an agent to cure diseases depends on some other factors also, among which daily contact and interaction with plant is important. Moreover, people of rural areas have compulsion due to economic reasons and problems in accessibility in reaching to the conventional health care system¹. So, area wise documentation is important.

In the present study, attempts are being made to document such folk practices commonly used for various problems related with female genital system and other related matters.

Methodology

The present study was performed in three districts of the southern part of West Bengal state of India having different agro-climatic conditions. First one was Paschim Medinipur district, where the soil is mostly sandy lateritic type. A good portion of that district is covered by forest. The inhabitants of that area are mainly of tribal origin (*Santhal* and *Lodha* tribes). The representative blocks are Gopiballavpur 1 and Narayangarh. The second district was Purba Medinipur, where the soil is clay-rich, and commonly water lodge in some areas

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during monsoon. The representative blocks are Moyna and Mahisadal. The third district was Murshidabad, which is having mainly new alluvial loamy soil. The representative blocks are Raninagar -1 and Berhampur. The blocks of the concerned districts were selected arbitrarily basing on remoteness, representation of agro-climatic conditions of the districts in question and uses of different plants as medicine by the people. Name of the villages from where the samples were collected were also documented. The medicinal uses of the plants listed are not common in every place of the study area. The plant specimens were always collected from an area of its use, though same types of uses were found in some other places of the study areas also.

The investigation was performed by face to face dialogue with the medicine men and medicine women of the study area. Information was collected from both tribal people as well as from non-tribal people of different castes and religions. The knowledge and practice of those people were

noted and no modification has been performed during presentation of the information. The plants they use are all locally grown. Samples were collected, photographed and branded at local name. Subsequently these were identified by Taxonomist and the specimens were preserved in herbarium.

Observations

The result of the study is described briefly indicating the species of the plants, vernacular names, collection number along with a brief statement on their medicinal uses in female diseases. Important previous observations were also provided along with proper references. As many of the Gynecological problems are actually some external expression of many internal conditions which are dependent on many other factors, the principal reported uses of the plants documented previously are also stated. This may help in searching correlation of possible expression of physiological effects of the concerned plant under discussion (Table 1).

Table 1— The plants traditionally used in various female diseases in southern districts of West Bengal, India

Botanical name, family, Voucher No & local name	Medicinal uses	Published reports
<i>Amaranthus spinosus</i> L.; Amaranthaceae; Col. No.11 (MP) Bengali: <i>Kantanotee</i> , Hindi: <i>Kanta Chaulai</i> , English: Prickly Amaranth	The root paste is mixed with a little amount of molasses before eating it at morning to cure leucorrhoea and other menstruation related problems of ladies. 4-5 gm of root is used daily for 15 days to achieve the desired result.	It is used in digestive problems, biliousness, agalactia, anemia, flatulence, anorexia, blood diseases, burning sensation, leucorrhoea, leprosy and piles ³ . It has actions as antidiabetic, antitumor, analgesic, antimicrobial, spasmolytic, hepato-protective, spermatogenic, antifertility, antioxidant properties ⁴ . It has also antigastric ulcer activity ⁴ .
<i>Ambroma augusta</i> L.f.; Sterculiaceae; Col No. 25 (P) Bengali: <i>Ulatkambal</i> , Hindi: <i>Ulatkambal</i> , English: Devil's cotton	The root of this plant is fed to the female patients suffering from dysmenorrhoea and leucorrhoea. The roots are collected, washed and pressed to make a paste and mixed with some honey or sugar and water before used as a drink. 2-3 gm of fresh root is fed to the patients daily for one month.	The root and bark of this plant is uterine tonic and used for treatment of sterility and other menstrual disorders ^{5,6} . Powdered roots act as an abortifacient and antifertility agent ^{5,6} . Leaves are useful in treating uterine disorder ⁵ and diabetes ^{5,6} .
<i>Ayapana triplinervis</i> (Vahl) R.M.King & H.Rob.; Eupatorieae; Col. No. 14 (P); Bengali: <i>Ayapan</i> , Hindi: <i>Ayapan</i> , English: Ayapana tea.	Extract taken out from 4-5 succulent leaves is fed to the patients daily during the menstruation period to control excessive menstrual bleeding.	Traditionally this plant is used as antiseptic, antineoplastic, antitussive, antiulcerous, astringent, cardio tonic, cicatrizant, depurative, diaphoretic, emollient, hemostat, hepatoprotector, laxative, stimulant, tonic and vulnerary agent ⁷ .
<i>Asparagus racemosus</i> Willd.; Asparagaceae; Col. No. 56 (M) Bengali: <i>Satamuli</i> , Hindi: <i>Satavari</i> , English: Asparagus.	Two to three gm of root of this plant are collected, cleaned, pressed, mixed with some sugar and water and fed daily to the patients of Leucorrhoea and dysmenorrhoea.	It is having effect on fertility and libido ⁸ , pregnancy and lactation ⁹ . It has properties like immunomodulation ¹⁰ , antistress, antidiarrhoeal, antidyspepsia, adaptogenic, antiulcerogenic, antioxidant, cardio protection and phytoestrogenic action ¹¹ .

Table 1— The plants traditionally used in various female diseases in southern districts of West Bengal, India—*Contd*

Botanical name, family, Voucher No & local name	Medicinal uses	Published reports
<i>Calotropis gigantea</i> (L.) Dryand.; Asclepiadaceae; Col No. 35 (MP) Bengali: <i>Akanda</i> , Hindi: <i>Madar</i> , English: Giant Indian Milk Weed.	The root of this plant is fed to the pregnant women during first trimester of pregnancy to induce abortion. 4-5 gm root paste is fed orally for that purpose. A paste made from the leaves is also introduced inside the vagina along with feeding of the root paste if only feeding of root paste fail to induce abortion.	Various parts of this plant possess therapeutic properties like antipyretic, analgesic, anticonvulsant, anxiolytic, sedative, wound healing, antidiabetic ¹² . Latex is used as base for mixing of other two plant parts for use as birth control tablet ¹³ . It is used for the treatment of anthelmintic, carminative, cough, leprosy, and asthma in China ¹⁴ . The plant is abortifacient ¹⁵ .
<i>Hygrophila auriculata</i> (Schumach.) Heine Syn. <i>Hygrophila spinosa</i> T.Anderson.; Acanthaceae; Col. No. 7 (P) Bengali: <i>Kulekhara</i> , Hindi: <i>Gokulakanta</i> , English: Hygrophila.	It is believed that excessive menstrual bleeding of ladies can be cured by regular eating of fresh extract or juice extracted from half boiled leaves of this plant. Extract of 4-5 gm leaves are taken daily.	The leaves are used in diuretic, jaundice, antibacterial, dropsy, rheumatism, diseases of urogenital tract, tonic, aphrodisiac, hypnotic, urinary calculi, anti-inflammatory, biliousness, ascites, anemia, anuria, stomachic, lumbago, arthritis, gastric disorder and leucorrhoea ¹⁶ .
<i>Tamarindus indica</i> L.; Caesalpinaceae; Col. No. 51 (P) Bengali: <i>Tentul</i> , Hindi: <i>Imli</i> English: Tamarind.	The small, tiny root and allied stem, mainly of baby plant is cut and used freshly after washing as an inducer of abortion by the medicine-men of rural Bengal. Generally, a portion of it is introduced inside the uterus and kept as such for a day or two to achieve the purpose, but sometimes a paste is made from it and applied on the <i>os uteri</i> portion of gravid uterus to achieve the same purpose.	It is used as/in abdominal pain, peptic ulcer, spasmolytic, cancer, antimicrobial, antiparasitic, antifungal, antiviral, antioxidant, anti-diabetic, liver protective, cardiovascular protective, wound healing ¹⁷ , rheumatism, laxative, scurvy, cicatrizing, anti malaria, tonic, digestive, astringent, cough, conjunctivitis, anti-arthritis, sore throat, fever, inflammation ¹⁸ . Used also for immunomodulation ¹⁰ .
<i>Tinospora cordifolia</i> (Willd.) Miers. ; Menispermaceae; Col. No. 81(M) Bengali: <i>Gulanchara</i> , Hindi: <i>Guduchi</i> English: Tynospora.	It is believed that eating of 2-3 gm of root paste daily at alternate days at morning can convert the irregular menstruation cycle, particularly of teenagers, to a regular one and reduction of menstrual pain.	This plant is used as immunomodulation ¹⁰ , antitumor, cognition, anti-inflammatory, anti-neoplastic, antihyperglycemia, antihyperlipidemia, antioxidant, anti-tuberculosis, gastrointestinal and hepatoprotection, anti-osteoporotic, anti-angiogenic, anti-malarial, anti-allergic and side effects prevention of the cancer chemotherapy ¹⁹ . Various studies proved its Anti-Diabetic, Immuno-modulatory, Anti-toxic, Anti-HIV, Anti-cancer properties ²⁰ .
<i>Withania somnifera</i> (L.) Dunal; Solanaceae; Col. No. 59 (M) Bengali: <i>Ashwagandha</i> , Hindi: <i>Ashwagandha</i> , English: Indian Ginseng.	The root of this plant is used as a curative agent for impotency of male and infertility of female. People suffering from impotency or infertility are given 2-3 gm of root pieces in empty stomach daily for 15 days. Then after a rest of seven days, the dose is repeated until cure.	This plant is used as rejuvenator, general health tonic and also a sedative, diuretic, anti-inflammatory, immunostimulatory and an anti-stress agent. It is used to treat ulcers, emaciation, diabetes, epilepsy, insomnia, senile dementia, leprosy, Parkinson's disease, nervous disorders, rheumatism, arthritis, intestinal infections, impotence and a suppressant in HIV/AIDS patients ²¹ .
Combinational uses		
1. <i>Moringa oleifera</i> Lam.; Moringaceae; Col. No. 38 (MP) Bengali: <i>Sojney/Sajina</i> , Hindi: <i>Saijna</i> English: Drumstick tree.	Approximately 10 gm bark of each of the three plants [1. <i>Moringa oleifera</i> Lamk. 2. <i>Saraca asoca</i> (Roxb.), Wild. and 3. <i>Terminalia arjuna</i> (Roxb.) Wight & Arn.] are taken and kept in 100-150 ml. of hot water at night. At morning, these are pressed to get the extract. The extract is fed regularly to the female patients at alternate days for 2-3 months to cure dysmenorrhoea and leucorrhoea.	Previous report for individual use: Various parts of <i>Moringa oleifera</i> act as cardiac and circulatory stimulants, possess antitumor, antipyretic, antiepileptic, anti-inflammatory, antiulcer, antispasmodic, diuretic, antihypertensive, cholesterol lowering, antioxidant, antidiabetic, hepato-protective, antibacterial and antifungal activities ²² . It is used in anemia, anxiety, asthma, blackheads, blood impurities, chest congestion, cholera, diarrhea, eye and ear infections, fever, abnormal blood pressure, joint pain, scurvy, semen deficiency, headaches and tuberculosis ²³ , dysentery, vermifuge, conjunctivitis, respiratory diseases ¹⁸ . Leaf decoction fed as/in diarrhea and immune system booster ²⁴ . Leaves are an excellent source of Vitamin A, B and C, minerals (calcium, iron) and protein. The flowers are rich in potassium and calcium ²⁵ .

Contd

Table 1— The plants traditionally used in various female diseases in southern districts of West Bengal, India—*Cont*

Botanical name, family, Voucher No & local name	Medicinal uses	Published reports
2. <i>Saraca asoca</i> (Roxb.) Willd.; Caesalpinaceae; Col. No. 95 (P) Bengali: <i>Ashok</i> , Hindi: <i>Ashoka</i> English: <i>Saraca</i> .	-	Previous report for individual use: All the plant parts are considered to contain medicinal properties. Plant is used in leucorrhoea ²⁶ , flowers used in treatment of diabetes, bleeding piles, cancer, hemorrhagic dysentery, uterine infections, Leaves and dried flower shows antibacterial activity, bark and flowers exhibit antitumor activity, larvicidal activity, chemopreventive activity ²⁷ . Root is also used in obstruction of urinary passage and ammenorhea. It is drunk after delivery to procure copious lochial discharge. It is useful in signs of congested uterus and pain, painful periods, fixed pain, clots and amenorrhea, endometriosis ²⁸ .
3. <i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.; Combretaceae; Col. No. 88 (MP) Bengali: <i>Arjun</i> , Hindi: <i>Arjun</i> English: <i>Arjun tree</i> .		Previous report for individual use: The bark is used for treatment of angina and heart disease, relieving excessive menstrual bleeding, leucorrhea, diarrhea, dysentery, tubercular cough, asthma, earache, cleansing sores, ulcers and syphilitic infection, skin disorder ²⁹ . Stem bark is also used in/as Aphrodisiac, styptic, Spermatorrhoea, intrinsic hemorrhage, liver problems ³⁰ .

Discussion

From the study, it appears that along with the use of modern medicine, a segment of rural people residing in West Bengal are still in practice to use various parts of locally available plants to cure various health problems of women. Generally, the problems related with female genital system are considered as gynecological problems. But during discussion with the rural medicine men and women, problems which are anyhow related with menstruation period, conception, child bearing, breast feeding of children, etc., were considered as female related problems. This idea is included in this article.

A total of 13 plant species with effect on pregnancy and lactation and 14 plant species with effect on fertility and libido were listed in one previous study³¹. Among these 27 plants, only four plant, viz. *Withania somnifera*, *Saraca asoca*, *Asparagus racemosus* and *Tinospora cordifolia* are common with the present observation.

It was observed that people of the study area use parts of some of our study plants which are common with same or related type of use in some other parts of our country or in some other countries. This emphasize on the probable usefulness of those plants as the use of the plants for any typical use at medicinal purpose was generally based on the experience of the people of several generations. But for some other plants, such as *Tamarindus indica*, *Tinospora cordifolia*, *Moringa oleifera*, *Ayapana*

triplinervis, no previous reporting directly related with our study was found (Table 1). But consideration should be given on the point that many other so called unrelated reporting of use of a plant may be a very strong relation with our study subject. The immunomodulatory or immunostimulatory and antioxidant effect of *Tinospora cordifolia*, anti-inflammatory, antiulcer, antioxidant, hepatoprotective, antibacterial and antifungal activities of *Moringa oleifera* as well as antiseptic, antiulcerous, haemostatic and hepatoprotective activity of *Ayapana triplinervis* (Table 1) may have very strong relation with cure of various female diseases, particularly among malnourished ladies residing in the rural areas of our country.

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